WHAT IS CLAIMED IS:

1. A coated abrasive product, comprising:

a substrate; and

an abrasive layer overlying the substrate, the abrasive layer comprising abrasive grains and a binder, the binder being formed from a binder formulation comprising first and second binder components mixed together uniformly with the abrasive grains, wherein the first binder component is radiation curable and the second binder component comprises a powder and is thermally curable.

2. The product of claim 1, wherein the second binder consists essentially of powder.

3. The product of claim 1, wherein the first binder component is curable by at least one of UV, microwave, and e-beam radiation.

4. The product of claim 1, wherein the first binder component comprises a UV curable binder compound.

5. The product of claim 4, wherein the first binder component comprises a blend of UV curable binder compounds.

6. The product of claim 4, wherein the UV curable binder compound is selected from the group consisting of acrylate and methacrylate oligomers and monomers including epoxy acrylates, aliphatic urethane acrylates, aromatic urethane acrylates, polyester acrylates, aromatic acid acrylates, epoxy methacrylates, aromatic acid methacrylates, and mono-, di-, tri-, tetra-, and pentafunctional acrylates and methacrylates, and mixtures thereof.

7. The product of claim 1, wherein the second binder component comprises a thermoset polymer.

8. The product of claim 7, wherein the thermoset polymer comprises a polymer from the group consisting of an epoxy resin, urethane resin, phenolic resin, urea/formaldehyde, melamine/formaldehyde, acrylic, polyester, vinyl, and mixtures thereof.

9. The product of claim 1, wherein the abrasive grains comprise at least one material from the group consisting of alumina, zirconia, silicon carbide, garnet, diamond, cubic boron nitride, and combinations thereof.

10. The product of claim 9, wherein the abrasive grains comprise alpha alumina.

11. The product of claim 1, wherein the binder formulation further comprises a coupling agent.

12. The product of claim 11, wherein the abrasive grains are treated with the coupling agent prior to mixing with a balance of the binder formulation.

13. The product of claim 11, wherein the coupling agent comprises an organosilane or an organotitanate.

14. The product of claim 13, wherein the coupling agent comprises an amino silane or methacryloxy silane.

15. The product of claim 1, wherein the substrate comprises a component from the group consisting of polymer films, cellulosic materials, and fabrics.

16. The product of claim 15, wherein the cellulosic materials include paper, and fabrics include cotton and polyester substrates having polymeric saturants.

17. The product of claim 1, wherein the first binder is mono-curable, and the second binder is mono-curable.

18. The product of claim 1, wherein the abrasive layer has a raised pattern of surface features.

19. The product of claim 18, wherein the surface features form a contiguous pattern.

20. The product of claim 18, wherein the surface features are discrete protrusions.

21. The product of claim 18, wherein the abrasive layer is formed by contacting the surface of the substrate with a patterned tool to impart the raised pattern.

22. The product of claim 21, wherein the patterned tool has a repeating polygonal pattern, leaving a raised polygonal pattern of surface features on the substrate.

23. A method of forming a coated abrasive product, comprising:

mixing a binder formulation with abrasive grains to form an abrasive dispersion, the binder formulation comprising a mixture of first and second binder components, wherein the first binder component is radiation curable and the second binder component comprises a powder and is thermally curable;

coating a substrate with the abrasive dispersion to form a coated intermediate product;

irradiating the coated intermediate product to cure the first binder compound; and

thermally treating the coated intermediate product to cure the second binder compound.

24. The method of claim 23, wherein the second binder compound consists essentially of powder.

25. The method of claim 23, wherein coating and irradiating are carried out in a continuous process.

26. The method of claim 25, wherein thermally treating is carried out in the continuous process.

27. The method of claim 25, wherein the continuous process is a spool to spool process, in which the substrate is translated during at least the coating and irradiating steps.

28. The method of claim 25, wherein coating is carried out utilizing a tool to pattern the abrasive dispersion on the substrate.

29. The method of claim 25, wherein thermally treating is carried out off-line, the coated intermediate product being in wound form, and being bulk heated to effect curing of the second binder component.

30. The method of claim 23, wherein the coating is carried out such that the abrasive dispersion forms a pattern, the coated abrasive product being a structured abrasive product.

31. The method of claim 23, wherein the first binder component is a UV curable binder component.

32. The method of claim 23, wherein the UV curable binder component is selected from the group consisting of acrylate and methacrylate oligomers and monomers including epoxy acrylates, aliphatic urethane acrylates, aromatic urethane acrylates, polyester acrylates, aromatic acid acrylates, epoxy methacrylates, aromatic acid methacrylates, and mono-, di-, tri-, tetra-, and pentafunctional acrylates and methacrylates.

33. The method of claim 23, wherein the second binder component comprises a thermoset polymer.

34. The method of claim 33, wherein the thermoset polymer comprises an epoxy resin, urethane resin, phenolic resin, urea/formaldehyde, melamine/formaldehyde, acrylic, polyester, or a mixture thereof.